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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,585	09/08/2003	Dan Fraenkel	1856-33100	9875
31889	7590	04/21/2005	EXAMINER	
DAVID W. WESTPHAL CONOCOPHILLIPS COMPANY - I.P. Legal P.O. BOX 1267 PONONCA CITY, OK 74602-1267			NGUYEN, CAM N	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/657,585

Applicant(s)

FRAENKEL, DAN

Examiner

Cam N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on January 28, 2005 (an election).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) 63-75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30, 32-38, 40-45, 47-49 and 51-62 is/are rejected.
- 7) ☒ Claim(s) 31, 39, 46 and 50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on originally filed is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/28/04, 05/26/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-62, in the reply filed on January 28, 2005 is acknowledged.
2. Claims 63-75 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Election was made without traverse in the reply filed on January 28, 2005.

### ***Claim Objections***

3. Claims 1, 22, 30, & 32 are objected to because of the following informalities:
  - A. In claim 1, lines 3 & 5, "afford" is suggested changed to --provide--.
  - B. In claim 1, line 4 of step(c), "any" should be deleted.
  - C. In claim 22, line 2, "any" should be deleted.
  - D. In claim 30, line 3, "any" should be deleted.
  - E. In claim 30, line 5, "any" should be deleted.
  - F. In claim 32, line 6, "any" should be deleted.Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112 (Second Paragraph)***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 & 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Regarding claim 1, last two lines, the limitation on "creating a surface coverage" is unclear as to what applicants intend. It appears that a coating of alumina is partially covered on the surface of the rare-earth metal oxide, but the claim does not particularly point out so. Thus, renders the claim vague and indefinite.

B. Claim 1 recites the limitation "said coverage coating" in last line of claim 1. There is insufficient antecedent basis for this limitation in the claim.

C. Regarding claim 23, line 2, the phrase "mostly" does not particularly point out the amount or concentration for the "theta-alumina". It renders the claim unclear, vague and indefinite.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 6-11, 13-28, 30, 32-36, 40-45, 47-49, 51-55, 57-60, & 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hindin et al., "hereinafter Hindin", (US Pat. 3,993,572).

Hindin discloses a composition consisting essentially of a relatively catalytically-inert, solid support having coated thereon a minor amount of a catalytically active composite consisting essentially of a catalytically-effective amount of a platinum group metal selected from the group consisting of platinum, palladium, ruthenium, iridium and rhodium, added to an admixture of a rare earth metal oxide and alumina, said admixture containing alumina in an amount in the range of 70-99% by weight and selected from the group consisting of  $\gamma$ -alumina,  $\kappa$ -alumina, and  $\delta$ -alumina and containing rare earth metal oxide in an amount in the range of 1-30% by weight and selected from the group consisting of cerium oxide, lanthanum oxide, samarium oxide and praseodymium oxide, said admixture having a relatively high surface area of at least 75 m<sup>2</sup>/g and having been derived from alumina or aluminum compound and from said rare earth metal oxide or a compound of said rare earth metal which has been calcined at a temperature of at least 750°C to yield said alumina and said rare earth metal oxide (see col. 16, claim 1). The platinum group metal is incorporated in said calcined composite in an amount up to about 20% by weight of said composite (see col. 16, claim 4). Specifically, the catalyst composition is prepared by forming an intimate admixture of alumina and cerium nitrate in hydrated form then drying and calcining at a temperature of 1100°C. After that, coating a honeycomb material with the alumina and ceria support material then finally coated the platinum group metal onto the alumina and ceria-coated honeycomb by impregnation technique to obtain a catalyst composition (see col. 11, Example 1). Hindin further discloses the catalyst may also contain minor amounts of other ingredients which may or may not serve as promoters for oxidation and reduction

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reactions including manganese, vanadium, copper, iron, cobalt, chromium, nickel, and the like (see col. 6, ln 36-42). Suitable aluminum and rare earth compounds including nitrates, oxalates, etc. (see col. 6, ln 53-60).

Hindin discloses the claimed catalyst support, process of preparing a catalyst support, catalyst composition, and process of preparing said catalyst composition, except for the limitation on "creating a surface coverage comprising an oxide of said rare-earth metal, said coverage coats the alumina at least partially" recited in claims <sup>1, 21, 32, & 49</sup> ~~5~~.

While the reference does not teach that the surface of the alumina is at least partially coated with the rare-earth metal oxide, it is considered *prima facie obvious* to one of ordinary skill in the art that the alumina is coated with rare-earth metal oxide the same way in Hindin, in view of the same calcination temperature disclosed in both the Hindin reference and applicants' instant claims 15-16 & specification page 28, Examples 2S-6S.

Regarding claims 44-45 & 47-48, the intended use limitations in the claims are noted. While the intended use limitations in the claims are not disregarded, they have no bearing on the patentability of the claimed composition and process of making the composition per se. It is well settled that terms merely setting forth intended use for, or a property inherent in, an otherwise old composition do not differentiate the claimed composition from those disclosed in the prior art, see In re Pearson, 181 USPQ 641. Also, it is contrary to spirit and patent laws that patents be granted for old compositions of matter based on new uses of compositions where uses consists merely in employment of compositions; patentee is entitled to every use of which invention is

susceptible, whether such use be known or unknown to him, see In re Thrau, 57 USPQ 324.

8. Claims 4-5, 29, 37-38, 56, & 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hindin et al., "hereinafter Hindin", (US Pat. 3,993,572), as applied to claims 1-3, 6-11, 13-28, 30, 32-36, 40-45, 47-49, 51-55, 57-60, & 62 above, and further in view of Bellussi et al., "hereinafter Bellussi", (US Pat. 6,596,667 B2).

Hindin discloses a catalyst support, process of preparing a catalyst support, catalyst composition, and process of preparing said catalyst composition as described above, except for the following differences.

Regarding claim 4, Hindin does not disclose "the aluminum compound is gamma-alumina having a surface area and pore volume" as being claimed. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have substituted such known gamma-alumina support material of Bellussi for the alumina support of Hindin to result in a catalyst support and catalyst composition having improved in activities because it is known as useful catalyst support material as evidenced by Bellussi. Specifically, Bellussi discloses a carrier consisting of greater than 80% by weight of aluminum oxide and having an average particle diameter ranging from 120 to 180  $\mu\text{m}$ , a surface area greater than 175  $\text{m}^2/\text{g}$  and a pore volume greater than 0.35  $\text{cm}^3/\text{g}$  (see col. 10- col. 11, claim 1). Bellussi further discloses that the carrier mainly consists >80% of aluminum oxide in any phase composition selected from a

group including gamma, delta, theta, etc., and mixtures thereof (see Bellussi at col. 3, In 38-40).

Regarding claim 5, it is considered the claim is met by the teaching of the reference because the claim requires "no more than about 0.1% by weight Na<sub>2</sub>O", which provides for a minimal amount of "0%" Na<sub>2</sub>O, and the reference does not disclose any information on this impurities or the alumina of the reference contains any Na<sub>2</sub>O amount either.

Regarding claim 29, the claimed support properties are disclosed by the Bellussi reference (see above).

Regarding claims 37-38 & 61, Hindin does not disclose that the catalytically active metal contains the claimed promoters. Bellussi however discloses a supported cobalt-based catalyst, comprising a catalytically active phase supported on a carrier (see Bellussi at col. 10, claim 1), wherein catalytically active phase of the catalyst consists of greater than 80% by weight of cobalt (see col. 11, claim 4), and contains a promoter selected from the group of metals including the Group VIII metals (see Bellussi at col. 12, claim 15). It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated such known promoters into the catalytically active phase of Hindin to achieve a promoted catalyst because it is known and taught by Bellussi to do so.

Regarding claim 56, Bellussi does not disclose that "cobalt contains in the catalyst in the amount of between about 5 and about 40%". However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was



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made to have optimized the amount of cobalt disclosed by Bellussi to result in an effective catalyst, in view of In re Boesch.

### ***Allowable Subject Matter***

9. Claims 12, 31, 39, 46, & 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Citations***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 Form attached. All references are cited for related art.

### ***Conclusion***

11. Claims 1-75 are originally pending in the application. Claims 1-30, 32-38, 40-45, 47-49, & 51-62 are rejected. Claims 31, 39, 46, & 50 are objected. Claims 63-75 are withdrawn due to nonelected (distinct) invention(s). No claims are allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 8:45 AM - 5:15 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn *cnn*  
April 18, 2005

*Cam Nguyen*  
CAM N. NGUYEN  
PRIMARY EXAMINER  
*AV-1754*